Pest Alert

United States
Department of Agriculture
Forest Service
Northeastern Area
State and Private Forestry
NA-PR-01-09
June 2009

MILE-A-MINUTE WEED (*Persicaria perfoliata* (L.) H. Gross)

Dense mats of mile-a-minute weed overgrow a forest edge, completely covering other vegetation.

(Photo by Randy Westbrooks, U.S. Geological Survey)

Introduction

Mile-a-minute weed (*Persicaria perfoliata* (L.) H. Gross, formerly *Polygonum perfoliatum*, L.) is an annual vine in the Polygonaceae or Buckwheat family. It is native to eastern Asia including India, Bhutan, Nepal, China, Burma, Japan, Korea, Indonesia, Bangladesh, Siberia, the Philippines, New Guinea, the Malay peninsula and the Indochina peninsula. The plant was introduced into the United States in the 1930s from Japan at a plant nursery in York County, Pennsylvania, and an introduction garden in Prince Georges County, Maryland. Although mile-a-minute weed was eradicated from the introduction garden, it became established and eventually spread from the Pennsylvania site. Since mile-a-minute weed was introduced, its range has expanded in several directions for approximately 300 miles.

Ecological Threat

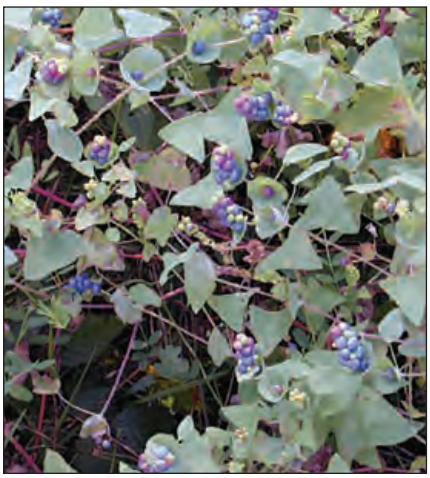
Mile-a-minute weed grows rapidly, out-competing native species by blocking available light. It infests nurseries, orchards, openings in forested areas, roadsides, and drainage ditches. As an early successional species, mile-a-minute weed grows rapidly in areas previously treated with herbicides, such as kudzu eradication sites, powerline rights-of-way, and recreational areas. Plant diversity is greatly reduced in these areas. Subsequently, wildlife species are affected by diminished food and habitat sources.

Economic Damage

Mile-a-minute weed is particularly threatening to forest regeneration by out-competing tree seedlings. It is extremely difficult to eradicate with a single herbicide application due to prolonged seed persistence in the soil. The seeds may survive in the soil for up to 6 years. Mile-a-minute weed also infests recreational and residential areas. Dense thickets of the sharp-spined plants can provide an unpleasant experience.

Identification and Biology

Mile-a-minute weed varies in height depending on habitat. In open areas it forms dense mats that cover everything, including small trees and shrubs. At forest edges, plants climb on other vegetation reaching up to 8 m in height. The light green, triangular leaves, 4 to 7 cm long and 5 to 9 cm wide, are alternately arranged along the stem. The stems are green, turning reddish with age and becoming woody near the base. The main veins, petioles and stems have sharp, recurved hook-like barbs. The ocrea, a saucer shaped sheath 1 to 2 cm in diameter encircles the node. The inflorescence is a spike-like cluster of 10 to 15 tiny white flowers. The fruits resemble blueberries and are 5 mm in diameter, arranged in clusters. Each fruit contains a single round, shiny-black achene. Annual plants have shallow, fibrous roots. In the eastern United States, mile-a-minute weed germinates in full sun in early spring, flowering begins in early June or July, and fruits are produced between early August and the first frost, usually mid-October.

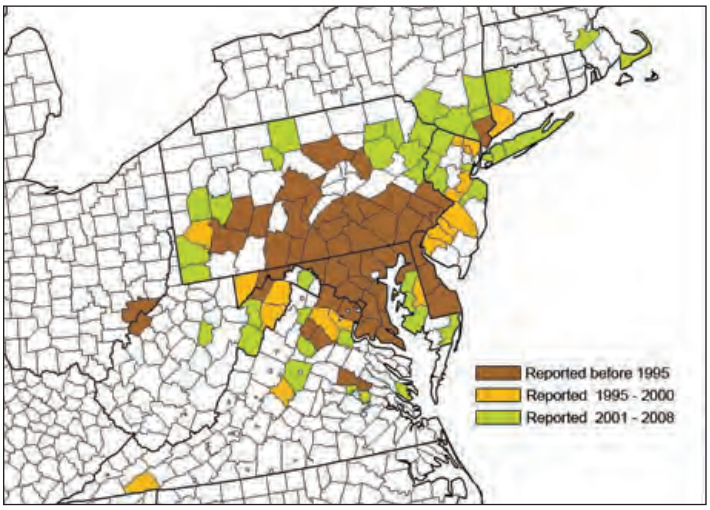


Triangular leaves, recurved barbs, and numerous bright blue fruits make mile-a-minute weed easy to identify.

(Photos by Denise Binion, USDA Forest Service)

Distribution

Mile-a-minute weed is currently found in Connecticut, Delaware, Maryland, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, Washington, DC, and West Virginia. Fifteen additional states within Plant Hardiness zones 6 and 7 have climates favorable to mile-a-minute weed establishment, growth, and spread.



Counties in the eastern United States with mile-a-minute weed.

Habitat

Mile-a-minute weed is a colonizer of disturbed sites and open areas, wetlands, forest edges, stream banks, roadsides, and open fields. Although it can tolerate partial shade, mile-a-minute utilizes its ability to attach to other plants and climb over them to reach higher light levels. Mile-a-minute weed prefers moist soils but survives in relatively dry areas.

Control and Management

Mechanical Methods

Because of its relatively weak root system, hand pulling, weeding and cultivation are useful for small infestations. Hand pulling of seedlings should be done before the sharp recurved barbs harden. Plant removal can continue throughout the summer, but is more effective when done before seeds are produced. Repeated low mowing and trimming will prevent flowering and reduce or eliminate seed production. However, seeds that remain in the ground may germinate for up to 6 years.

Cultural Methods

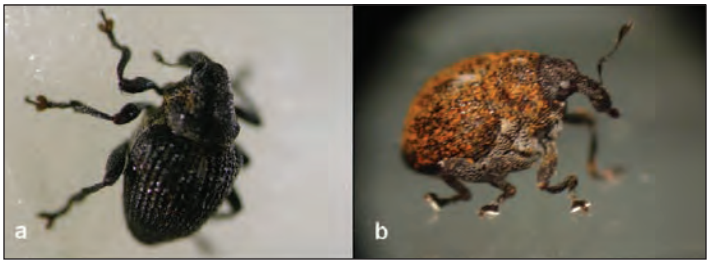
Maintain vegetation continuity and avoid creating gaps in existing vegetation. Maintain vegetative buffers along streams and forest edges to prevent establishment of and seed dispersal.

Herbicides

Both pre- and post-emergent herbicides are effective in killing mile-a-minute weed.

Biological Control

From 1996 to 2001, weed populations were surveyed in China, and 111 insect species were collected and identified. Among the insect species, a weevil, *Rhinoncomimus latipes* Korotyaev (Coleoptera: Curculionidae) proved to be the most promising biological control agent. The larva of the weevil causes damage to mile-a-minute weed by boring into the plant's stem. In 2000-2003 *R. latipes* was shipped to a Delaware quarantine facility for host range testing. In 2004, *R. latipes* was reared at the University of Delaware and the New Jersey Department of Agriculture, and released in Delaware and New Jersey based on recommendations of the Technical Advisory Group and subsequent approval by the Animal and Plant Health Inspection Service, Plant Protection and Quarantine. A total of approximately 150,000 weevils were released in five states from 2005 through 2009.



Rhinoncomimus latipes. Adult weevils are black upon emergence (a), but turn orange-brown (b) soon after feeding on mile-a-minute weed.

References and Resources

Visit the following Web sites for additional information on mile-a-minute weed.

http://ag.udel.edu/enwc/research/biocontrol/mileaminute.htm

www.nps.gov/plants/alien/fact/pope1.htm

Contact

Yun Wu, USDA Forest Service,
Forest Health Technology Enterprise Team (FHTET),
180 Canfield Street, Morgantown, WV 26505.
(304) 285-1594, ywu@fs.fed.us

Pesticides used improperly can be injurious to humans, animals, and plants. Follow the directions and heed all precautions on the labels.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the Federal Environmental Protection Agency, consult your county agricultural agent or State extension specialist to be sure the intended use is still registered.

Published by:
USDA Forest Service
Northeastern Area
State and Private Forestry
Newtown Square, PA 19073
www.na.fs.fed.us

Federal Recycling Program
Printed on recycled paper.

USDA is an equal opportunity provider and employer.